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ABSTRACT

Assessments of organizational effectiveness in a sample of four-year institutions in 1976, 1980, and 1983 were used to investigate the potential causal directionality of unionism and organizational effectiveness. Nine dimensions of effectiveness were analyzed: student educational satisfaction, student academic development, student career development, student personal development, faculty and administrator employment satisfaction, professional development and quality of the faculty, system openness and community interaction, ability to acquire resources, and organizational health. In 1976, 41 institutions participated; in 1980, 20 of the same institutions participated; and in 1983, 26 of the institutions participated. Eighteen of the schools were common to all three studies. The number of respondents was 1,317 in 1976, 1,240 in 1980, and 246 in 1983. Respondents consisted of academic, financial, student affairs, and general administrators, faculty department heads, and trustees. The results of the analyses suggest that ineffectiveness leads to unionism, but that once unionized, organizational effectiveness does not seem to improve. (SW)

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INVESTIGATING THE CAUSAL ASSOCIATION BETWEEN UNIONISM AND ORGANIZATIONAL EFFECTIVENESS

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This paper was presented at the Annual Meeting of the Association for the Study of Higher Education held at the Conrad Hilton Hotel in Chicago, Illinois, March 12-14, 1984. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

INVESTIGATING THE CAUSAL ASSOCIATION BETWEEN UNIONISM AND ORGANIZATIONAL EFFECTIVENESS

ABSTRACT

Earlier research found that a negative relationship exists between faculty unionism and organizational effectiveness in colleges and universities. No research, however, has ever investigated potential causality in this relationship, that is, whether ineffectiveness leads to unionism or whether unionism leads to ineffectiveness. This study relies on assessments of organizational effectiveness in a sample of four-year institutions in 1976, 1980, and 1983 to investigate the potential causal directionality of these two factors. The results of the analyses suggest that ineffectiveness leads to unionism, but that once unionized, organizational effectiveness does not seem to improve.

INVESTIGATING THE CAUSAL ASSOCIATION BETWEEN UNIONISM AND ORGANIZATIONAL EFFECTIVENESS

Little is known about the impact of collective bargaining in higher education, and speculation and opinion still dominate the literature (see Baldridge, et al., 1981; Gilmore, 1981; Wilson, 1983). A number of investigators have studied the causes of unionism (see Carr & Van Eyck, 1973; Duryea, Fisk, & Associates, 1973; Garbarino, 1975; Kemerer & Baldridge, 1975) but investigations of the effects of unionism have been few. Furthermore, these outcome studies are often limited to individual-level factors and traditional trade union variables such as participation, grievances, compensation, and working conditions (see Baldridge, Curtis, Ecker, & Riley, 1978; Bennett & Johnson, 1979; Birnbaum, 1974, 1976; Brown & Stone, 1977; Hedgepeth, 1974; Kemerer & Baldridge, 1975; Keaveny & Allen, 1979; Ladd & Lipset, 1978; Morgan & Kearney, 1977; Mortimer, 1975). Contradictory findings have been found regarding the impact of unions on these factors, and little longitudinal research had been done to help clarify the relationships. For example, Guthrie-Morse, Leslie, & Hu (1981) found that under some conditions nonunion faculties have received higher compensation than union faculties, but under other conditions the reverse is true. Birnbaum (1980) summarized literature arguing that decreased participation and communication occur on unionized campuses, whereas Baldridge and Kemerer (1981) summarized literature arguing just the reverse. Shanker (1978), Cameron (1982), Lombardi (1979), and others found that the relative power of the faculty increases relative to administrators under unionized conditions. Richardson and Mortimer (1979), Baldridge, et al. (1981), Baldridge and Tierney (1979), and

others reported the opposite; that is, that administrator power increased relative to the faculty.

In addition to this ambiguity regarding individual-level factors, confusion and lack of clarity also are present regarding the relationship between unionism and organization-level factors. These variables have been included in research much less frequently than individual-level variables, although some studies have recently begun to appear. Kerr (1980) pointed out that "collective bargaining, in nearly all situations, has its origins more in antagonism than in affection, in hate than in love (p. V)." Consequently, the formation of unions is expected to affect the climate of colleges and universities and the processes of governance. For example, Wilson, et al. (1983) found "significant changes" in governance, academic freedom, administrator and faculty attitudes, and performance when comparing pre- and post-union conditions. Moore (1981) reported major alterations in trust, standardization, centralization, and leadership style associated with unionism. Richardson and Mortimer (1978) found increased rigidity and decreased innovation in unionized schools (although they speculated that these conditions would decrease over time), and Baldridge, et al. (1978) reported more formalization, standardization, and centralization of procedures when unionism was present. Gilmore (1981) reported changes from collegial to adversarial relationships among faculty and administrators and greater specialization of functions.

On the other hand, Birnbaum and Inman (1983) reported that no significant change occurred on the Institutional Functioning Inventory dimensions (including academic freedom, governance, administrator and

faculty attitudes, leader style, morale, innovation, adaptability, etc.) between 1970 and 1980 for unionized versus nonunionized schools. They concluded:

> Overall, therefore, recent research is building up a cumulative, consistent and impressive picture of faculty collective bargaining as a process having surprisingly little impact upon many important aspects of institutional life. Neither those who have feared bargaining as a threat to traditional processes and values, nor those who have welcomed it as a universal corrective for continuing problems can find support for their positions in these studies (pp. 9-10).

Baldridge, et al. (1981) reached a similar conclusion after a nation-wide survey of faculty and administrators regarding unionism:

> Administrators say unions have hurt a little, while union officials say unions have helped a little—but overall, the impression is that not much has changed. Faculty collective bargaining has not brought about the revolutionary changes its detractors and its supporters had predicted (pp. 6, 46).

Whether these differences in findings are due to variance in the definitions and measurement of unionism, to the different types of institutions used in each study, or to other factors embedded in the research designs is not clear. What is clear, however, is that the topic of faculty unionism and its relationship to the functioning of institutions of higher education is a controversial and often emotional topic. Proponents and antagonists of unionism have argued their cases with vehemence.

Unionism and Effectiveness

Several years ago research was conducted that contributed to the controversy surrounding the contributions and distractions of unionism in higher education (Cameron, 1982). That study investigated the

relationship between faculty unionism and organizational effectiveness in colleges and universities and was based on cross-sectional data that precluded any causal conclusions from being drawn. In that investigation, unionized institutions scored lower than nonunionized institutions on eight of nine dimensions of organizational effectiveness. It was not clear, however, whether ineffective organizational performance preceded unionized faculties, whether unionization led to ineffective performance, or whether some kind of mutual causation was present between unionism and the dimensions of organizational effectiveness. Some agitation resulted from the discovery of this negative relationship as proponents and antagonists of unionism attributed opposite causal direction to the results. Opponents of unionism argued that the effectiveness of institutions is damaged by unionizatation of the faculty. After unions form, institutional effectiveness decreases, they argued. Proponents of unionism, on the other hand, suggested that ineffective institutional performance was a primary motivation for faculties to unionize. Ineffectiveness caused unionism, therefore, and unions help restore higher levels of effectiveness after forming.

Unfortunately, no information has been available to support either point of view. Up to now, no study has been conducted to investigate associations between unionism and effectiveness using longitudinal data. In fact, Naples, Karuthers, and Naples (1978) summarized the current state of understanding regarding the effects of unionism on institutional performance this way:

> The jury is still out on the issue of the impacts of collective bargaining... Research is virtually non-existent and experiences are inconclusive. While it is difficult to conclude that faculty

> collective bargaining has damaged academic performance and vitality, the fact remains that a strong potential exists for this to occur (pp. 95-96).

The major purpose of this paper is to investigate the causal relationships between the organizational effectiveness of colleges and universities and faculty unionism. Because the earlier study found that effectiveness scores are lower in unionized institutions than nonunionized institutions (Cameron, 1982), the intent of this current study is to address the question: Does ineffectiveness lead to unionization, or does unionization lead to ineffectiveness?

Methodology

Identifying causality in the relationships between variables is most straightforward in experimental designs. The application of treatment effects as well as other potential intervening variables can be controlled sufficiently that causal relationships between variables become clear (see Campbell & Stanley, 1963). The problem with studying the relationship between unionism and effectiveness, however, is that neither the treatment effect nor potential extraneous causal factors can be controlled. That is, one cannot control when a faculty union will form, nor can one arbitrarily manipulate the performance of a college or university. In the earlier investigation, mean scores on effectiveness dimensions were compared between unionized and nonunionized institutions, and correlations between unionism and effectiveness were computed, but no causal conclusions could be drawn from either procedure.

Cross-lagged Correlation Analysis

In the absence of careful controls, therefore, as well as the absence of an expected theoretical relationship between unionism and effectiveness upon which path analysis (regression analysis) depends, the cross-lagged correlational technique is the most appropriate procedure to try to draw out patterns of causality (Campbell, 1963). Cross-lagged correlation is primarily an exploratory procedure designed to uncover "the preponderance of causation" (Crano, Kenny, & Campbell, 1972) by eliminating alternative explanations due to spuriousness (Kenny, 1975). Spuriousness refers to the condition where the relationship between two variables is not due to the effects of either, but to a third extraneous variable. The purpose of this analysis, therefore, is to identify which of two variables seems to be more powerful in affecting the other, while eliminating alternative causal explanations.

Kenny and Harackiewicz (1979) pointed out that cross-lagged analysis is largely an exploratory approach for generating interesting causal hypotheses. It is to be viewed more as an indicator of temporal precedence than as positive proof of causation. Because there is no a priori reason to expect unionism to lead to ineffectiveness or for ineffectiveness to lead to unionism, however, investigating this temporal precedence is a necessary first step in understanding the potential causal relationship between these two factors.

Cross-lagged correlational analysis requires at least two variables, each measured at two or more points in time. If one variable (e.g., unionism), measured at time 1, is consistently followed by a change in the other variable (e.g., effectiveness), measured at

time 2, and if the converse relationship is not true, then one can assume a causal association and direction. Correlations are computed between variable A at time 1 with variable B at time 2, and also between variable B at time 1 with variable A at time 2. It is rare that either of those two correlations is zero, because not only is it likely that some random correlation exists, but reciprocal causality is a common phenomenon among factors. However, if one correlation coefficient is significantly larger than another, a preponderance of causality can be assumed.

Four different conditions must be met in cross-lagged analysis in order to eliminate the possibility of spurious correlations or uninterpretable results (Clegg, Jackson, & Wall, 1977; Kenny, 1975; Crano, Kenny, & Campbell, 1972; Kenny & Harackiewicz, 1979). The first condition requires that the variables being assessed are reliable, or that all measures of the same factor at one point in time are highly correlated. Second, synchronicity must be present in the two variables being assessed. This means that the two variables must be measured at the same point in time. Synchronicity can be inspected by observing the correlations between variable A at time 1 and variable B at time 1, and the correlation between variable A at time 2 and variable B at time 2. Both correlations are expected to be moderate to high (i.e., approximately .3 or above). The third condition requires moderate stability or autocorrelation coefficients in at least one of the two variables. That is, when measuring variables at two points in time, some change must occur in one of the variables between the two assessment points in order for a causal association to be determined. A variable that does not change cannot be influenced by a second

variable that does not change (Clegg, Jackson, & Wall, 1977). The fourth condition, stationarity, means that the same causal relationship is present at the two points of measurement. The same causes of a variable exist at time 2 as existed at time 1. This required condition implies that cross-lagged analysis is most appropriate when a causal relationship has stabilized, and it is less appropriate under turbulent or rapid change conditions when causality is not in equilibrium (Randolph, 1981). Stationarity can be tested by inspecting the patterns of cross-lag differentials and the synchronous correlations ($r_{A_1A_2}$ and $r_{B_1B_2}$). Perfect stationarity exists when the synchronous coefficients do not change over time, or they change by some constant, and when the pattern of cross-lag differentials do not change over time.

The extent to which these four conditions--reliability, synchronicity, stability, and stationarity--are present in this investigation are explained in a later section.

Instrument

Organizational effectiveness was assessed in this investigation by an instrument first reported in Cameron (1978) and analyzed further in Cameron (1981, 1982, 1983a, 1983b). The instrument relies on judgments by internal dominant coalition members of the degree to which the organization possesses certain characteristics indicative of effective organizations. Nine valid and reliable dimensions of effectiveness are assessed by the instrument.

Internal consistency reliabilities are high for the nine dimensions, and a variance component analysis (Kavanagh, MacKinney, & Wolins, 1971) of a multitrait-multimethod matrix shows that the

convergent and discriminant validities of these dimensions are good. Correlations with objective indicators of effectiveness also provide evidence for the external validity of the dimensions. That is, the dimensions have been found to indicate characteristics of institutional performance, and they are not simply products of respondents' a priori attitudes. Statistical analyses also reveal that when rating the effectiveness of their institutions on the nine dimensions, faculty, administrator, and trustee judgments are essentially the same.

The nine dimensions of effectiveness and their definitions are:

1. Student educational satisfaction--The degree to which students are satisfied with their educational experiences at the institution.
2. Student academic development--The degree of academic attainment, growth, and progress of students and the academic opportunities provided by the institution.
3. Student career development--The degree of occupational development of students and the emphasis and opportunities for career development provided by the institution.
4. Student personal development--The degree of nonacademic, noncareer development (e.g., culturally, socially) and the emphasis and opportunities for personal development provided by the institution.
5. Faculty and administrator employment satisfaction--The satisfaction of faculty members and administrators with their employment.
6. Professional development and quality of the faculty--The degree of professional attainment and development of the

faculty and the emphasis and opportunities for professional development provided by the institution.

7. System openness and community interaction--The emphasis placed on and success in interacting with, adaptating to, and service in the external environment.
8. Ability to acquire resources--The ability of the institution to acquire resources such as good students and faculty, financial support, and so on.
9. Organizational health--The vitality and benevolence of the internal processes in the institution such as openness and trust, problem solving adequacy, shared information, etc.

Sample

The effectiveness questionnaire was administered to respondents in a sample of colleges and universities in 1976, 1980, and 1983. In 1976, 41 institutions participated; in 1980, 29 of those same institutions participated; and in 1983, 26 of the institutions participated. Eighteen of the schools were common to all three studies. The number of respondents was 1317 in 1976, 1240 in 1980, and 246 in 1983. Respondents in each study consisted of academic, financial, student affairs, and general administrators, faculty department heads, and members of boards of trustees. There is no way to tell if the same people completed the questionnaire in each of the three years, but the same job titles (e.g., president) were sent a questionnaire each time. Therefore, there is no reason to expect major respondent bias in the three separate questionnaire administrations. Institutional characteristics are listed in Table 1 for the sample in each of the three years.

TABLE 1 ABOUT HERE

Procedures

Questionnaires were administered three times instead of the two times required by cross-lagged analysis because there is no a priori time period that is appropriate for testing a potential causal association between unionism and effectiveness. Effects may occur in the short run, or a longer time may be required for them to appear. The design of this study makes it possible to investigate causal associations with time lags as close as three years or as long as seven years. It is unlikely that significant changes would occur in the nine dimensions of effectiveness measured in this study in a year or two, and cross-lagged analysis is inappropriate in conditions of marked change or turbulence. Therefore, at least a three year time span was deemed appropriate between questionnaire administrations in order for effects to stabilize. The relative stability of any proposed causal relationships can be determined by using the longer time frame in connection with the shorter time frame (see Tsui & Karwan, 1983).

Mean scores were computed for each of the institutions on each of the nine dimensions of effectiveness (OE), and an overall mean score (i.e., an average of the nine scores) was also determined. These scores were correlated with two measures of unionism--the presence or absence of a union (U_p) and the number of years the union had been in existence at the school (U_y). Consistent with the requirements of cross-lagged analysis, pair-wise correlations for each of the three years were analyzed, as shown in Figure 1.

TABLE 1 CHARACTERISTICS OF THE INSTITUTIONS IN THE 1976, 1980, AND 1983 SAMPLES

YEAR	NUMBER OF SCHOOLS	NUMBER PUBLIC AND (PRIVATE)	NUMBER UNIONIZED	AVERAGE ENROLLMENT
1976	41	17 (24)	18	4894
1980	29	11 (18)	12	4200
1983	26	13 (13)	13	4232

FIGURE 1 ABOUT HERE

Results

A comparison of effectiveness scores on the nine dimensions for unionized versus nonunionized institutions reveals that in each of the three years, unionized institutions generally score lower than nonunionized institutions. For example, a comparison of the overall average effectiveness score for the unionized schools with the overall average effectiveness score for the nonunionized schools reveals that in 1976 nonunionized institutions scored significantly higher than unionized schools at the $p<.01$ level, in 1980 at the $p<.001$ level, and in 1983 at the $p<.01$ level.

Figure 2 plots the mean scores of the two groups for 1976, 1980, and 1983 and shows that unionized schools have lower scores on eight of nine dimensions in 1976, seven of nine dimensions in 1980, and seven of nine dimensions in 1983. Unionized schools scored higher on one dimension in 1980 and one dimension in 1983; and there was one dimension in each year where scores were tied.

FIGURE 2 ABOUT HERE

Tests for significant differences among means revealed that the three dimensions comprising the "academic domain" (see Cameron, 1981) were significantly higher for nonunionized schools in each of the three years (i.e., nonunionized institutions scored higher on Student Academic Development, Professional Development and Quality of the

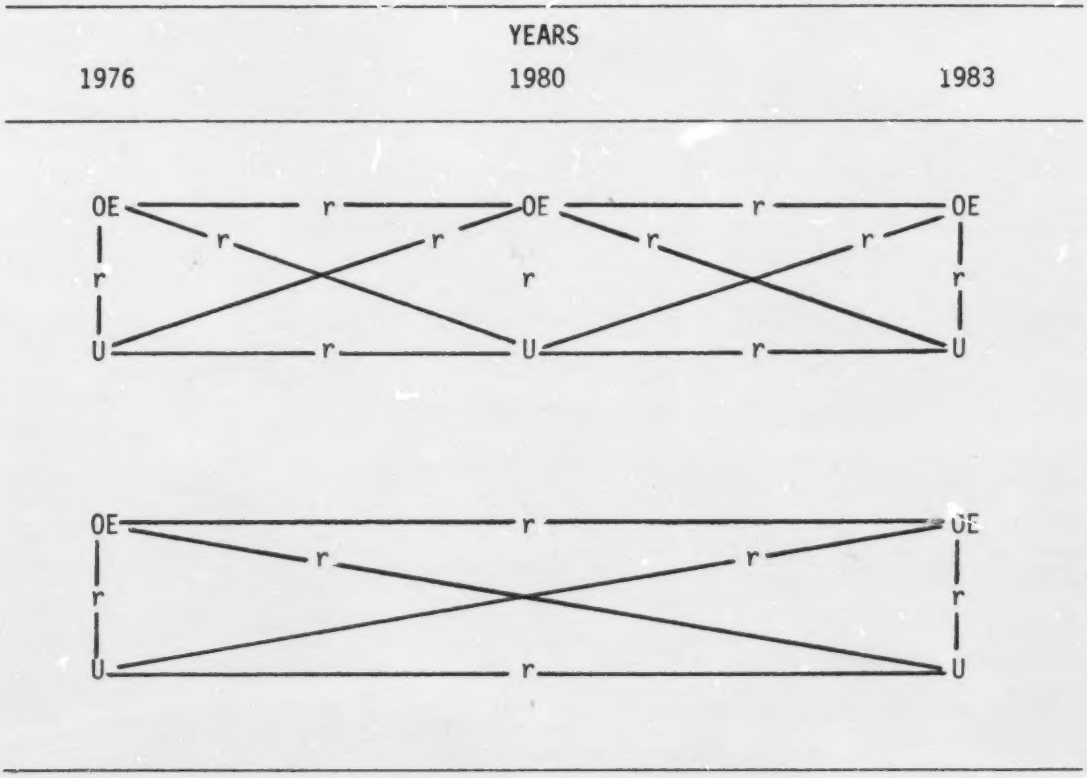
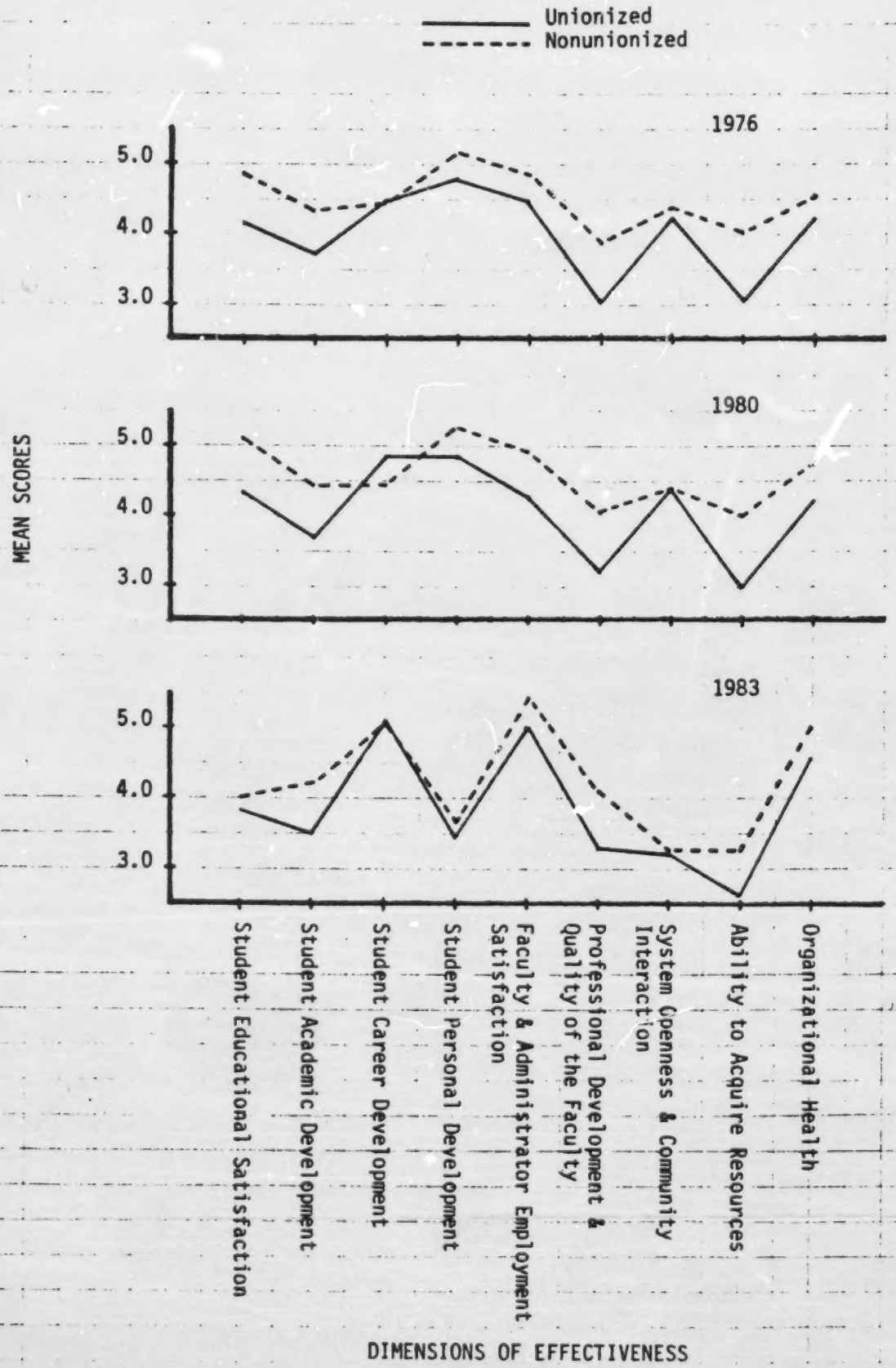


FIGURE 1 Cross-lagged Correlation Models for Investigating the Relationships of Effectiveness and Unionism

FIGURE 2 A Comparison of Means on Nine Dimensions of Effectiveness for Unionized versus Nonunionized Institutions



Faculty, and Ability to Acquire Resources). In addition, significant differences existed for five other dimensions in 1980, and for two other dimensions in 1983.[1]

These analyses confirm earlier findings showing unionized schools to be less effective overall than nonunionized schools. However, causal direction cannot be determined just by comparing mean scores. In order to determine which factor comes first, unionism or ineffectiveness, other analyses are required.

For example, the two institutions in the sample that formed unions between the first data collection effort in 1976 and the second data collection effort in 1980 were analyzed to see what changes occurred in their effectiveness scores. Both institutions experienced a substantial decrease in their overall mean effectiveness score between 1976 and the later data collection periods. However, because generalizing from a sample of two is tenuous, and because other institutions--both unionized and nonunionized--also experienced decreases, no conclusions can be drawn from those data. Instead it is necessary to perform the cross-lagged correlation analysis for the two models shown in Figure 1. Table 2 presents the means and standard deviations for each variable along with the complete correlation matrix.

TABLE 2 ABOUT HERE

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[1] In 1980, significant differences existed for all dimensions except System Openness and Community Interaction. In 1983, significant differences existed for Organizational Health in addition to the three academic domain dimensions.

TABLE 2 Correlations, Means, and Standard Deviations for Nine Dimensions of Effectiveness (OE_{1-9}), Overall Average Effectiveness (OE_o), Presence of a Union (U_p), and Number of Years of Union Presence (U_y) for 1976, 1980, and 1983

		Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1	OE_1 76	4.6	.76		.53	.14	.41	.81	.44	.31	.73	.62	.87	.63	-.16	.66	.69	.53	.33	.67	.67	.49	.43	.29	.46	.55	.17	.19	.64	.35	.81	.79	.59	-.35	-.21	-.42	-.33	-.42	-.33
2	OE_2 76	4.1	.82			-.26	.56	.46	.83	.20	.85	.30	.56	.96	-.62	.47	.29	.89	.09	.92	.43	.07	.89	-.08	.27	.37	.59	.00	.66	.14	.82	.72	.55	-.35	-.34	-.45	-.41	-.45	-.41
3	OE_3 76	4.4	.70				-.10	.32	-.20	.27	.00	.08	-.29	-.56	.89	-.19	.04	-.51	.23	-.43	.15	.13	.05	.71	.11	.46	-.03	.12	.44	.12	.17	-.25	.36	.20	.22	.13	.20	.13	.20
4	OE_4 76	5.0	.54					.34	.24	.15	.44	.40	.63	.54	-.15	.87	.48	.47	.34	.58	.58	.09	.68	-.05	.75	.47	.13	.23	.52	.35	.55	.69	.53	-.15	-.28	-.28	-.29	-.28	-.29
5	OE_5 76	4.7	.50						.34	.40	.65	.77	.76	.55	.16	.57	.80	.41	.39	.55	.75	.68	.49	.38	.48	.77	.21	.25	.65	.55	.79	.78	.73	-.26	-.05	-.41	-.23	-.41	-.23
6	OE_6 76	3.6	.78							.29	.78	.60	.36	.86	-.63	.39	.14	.94	.12	.85	.32	.09	.62	-.11	-.19	.01	.87	-.15	.60	.05	.75	.62	.38	-.51	-.41	-.50	-.49	-.50	-.49
7	OE_7 76	4.2	.39								.27	.59	.23	.14	.10	.25	.29	.09	.64	.14	.34	.30	.31	.20	.14	.33	.23	.54	.35	.29	.48	.30	.44	-.12	.11	-.17	-.03	-.17	-.03
8	OE_8 76	3.7	1.01									.66	.62	.87	-.43	.56	.41	.82	.20	.95	.48	.24	.80	.11	.35	.43	.57	-.02	.81	.21	.92	.78	.64	-.38	-.28	-.46	-.39	-.46	-.39
9	OE_9 76	4.4	.44										.53	.68	-.21	.53	.57	.59	.35	.61	.60	.41	.52	.03	.27	.48	.42	.25	.56	.47	.82	.68	.56	-.35	-.11	-.46	-.29	-.46	-.29
10	OE_1 80	4.8	.81											.70	-.13	.70	.83	.56	.37	.70	.84	.72	.55	.01	.75	.59	.35	.40	.70	.58	.73	.89	.71	-.41	-.32	-.50	-.41	-.50	-.41
11	OE_2 80	4.1	.75												-.55	.58	.47	.90	.20	.93	.61	.63	.84	-.36	.63	.52	.63	.12	.76	.45	.87	.84	.67	-.41	-.37	-.51	-.44	-.51	-.44
12	OE_3 80	4.6	.49													-.11	.15	-.55	.30	-.44	-.02	.50	.03	.77	.25	.30	-.10	.38	.24	.21	-.29	-.16	.38	.39	.41	.38	.41	.38	.41
13	OE_4 80	5.1	.50														.61	.57	.45	.59	.75	.76	.77	-.04	.88	.66	.62	.39	.86	.76	.68	.80	.88	-.34	-.42	-.41	-.42	-.41	-.42
14	OE_5 80	4.7	.57															.38	.53	.49	.89	.82	.49	.06	.69	.76	.35	.36	.65	.73	.59	.81	.74	-.35	-.23	-.50	-.36	-.50	-.36
15	OE_6 80	3.7	.69																.23	.90	.55	.46	.75	-.43	.39	.44	.84	-.03	.70	.47	.81	.79	.60	-.57	-.53	-.63	-.60	-.63	-.60
16	OE_7 80	4.4	.38																	.29	.63	.40	.24	.05	.40	.35	.03	.65	.29	.53	.38	.54	.42	-.07	-.06	-.00	.04	-.00	.04
17	OE_8 80	3.6	.91																		.60	.63	.88	-.24	.69	.52	.71	.21	.86	.49	.91	.87	.76	-.47	-.41	-.56	-.49	-.56	-.49
18	OE_9 80	4.5	.48																			.79	.53	-.00	.70	.69	.39	.45	.63	.79	.65	.89	.75	-.34	-.27	-.48	-.37	-.48	-.37
19	OE_1 83	3.9	.50																				.23	.36	.38	.54	.27	.34	.49	.62	.37	.82	.67	-.18	-.07	-.23	-.15	-.23	-.15
20	OE_2 83	3.9	.74																					.12	.42	.53	.65	.16	.79	.33	.79	.76	.76	-.36	-.41	-.47	-.44	-.47	-.44
21	OE_3 83	5.1	.66																						.03	.46	.00	.17	.33	.14	.23	-.07	.45	.17	.04	.08	.07	.08	.07
22	OE_4 83	3.6	.49																							.62	-.03	.50	.47	.61	.40	.79	.61	-.01	-.06	-.21	-.11	-.21	-.11
23	OE_5 83	5.2	.53																								.13	.42	.61	.70	.60	.70	.81	-.09	-.13	-.36	-.22	-.36	-.22
24	OE_6 83	3.7	.73																									-.04	.69	.27	.53	.58	.57	-.63	-.58	-.55	-.61	-.55	-.61
25	OE_7 83	3.3	.42																										.25	.58	.17	.39	.49	.13	.16	-.01	.10	-.01	.10
26	OE_8 83	3.0	.65																											.47	.85	.84	.89	-.32	-.34	-.41	-.38	-.41	-.38
27	OE_9 83	4.9	.49																												.37	.71	.73	-.27	-.24	-.43	-.33	-.43	-.33
28	OE_o 76	4.3	.46																													.89	.76	-.38	-.26	-.50	-.39	-.50	-.39
29	OE_o 80	4.4	.46																														.85	-.43	-.37	-.55	-.46	-.55	-.46
30	OE_o 83	4.1	.39																															-.30	-.32	-.46	-.39	-.46	-.39
31	U_p 76																																		.82	.90	.94	.90	.94
32	U_y 76	1.3	2.0																																	.74	.94	.74	.94
33	U_p 80																																				.92	1.00	.92
34	U_y 80	3.1	3.7																																			.92	1.00
35	U_p 83																																						.92
36	U_y 83	4.4	5.1																																				

Kenny and Harackiewicz (1979) indicated that interpretable results in cross-lagged analysis are most likely when the four conditions discussed earlier are present (i.e., reliability, synchronicity, stability, and stationarity) along with a large sample size. Large sample size is required because of the relatively small differences likely in cross-lagged correlations. "It is our expectation that even a strong causal effect may produce only a small cross-lag difference like .05 (Kenny & Harackiewicz, 1979, p. 374)." A sample size of 2,006 is necessary for the .05 cross-lag differential to be significant at the .05 level using the Pearson and Filon test (Peters & Van Voorhis, 1940); a sample size of 488 is required to detect a .10 difference; and a sample of 114 is necessary to detect a .20 difference. Unfortunately, this study has a very small sample size for cross-lagged analysis (N=41 in 1976, N=29 in 1980, and N=26 in 1983). Therefore, significant differences between correlation coefficients are not likely to emerge. A differential of at least .32 is necessary to be detected in a sample size of 41. Even if significant differences do not exist, however, hints about causal direction can still be obtained.

Before testing the cross-lag differentials, it was important to determine if the necessary four conditions were met for a cross-lagged analysis. Reliability of the nine effectiveness dimensions was confirmed for each of the three years. Internal consistency reliabilities ranged from .83 to .99 in 1976, .72 to .92 in 1980, and .70 to .90 in 1983. Synchronicity was confirmed by the fact that both unionism and effectiveness were measured simultaneously in each of the three time periods, and the synchronous correlations are all sufficiently large to suggest that some a priori relationship exists

between the two factors (see Kenny & Harackiewicz, 1979). Stability was found to be high among the variables. That is, the autocorrelations (e.g., $r_{OE_{76}OE_{80}}$) are high, suggesting that little change occurred between 1976 and subsequent years in unionism or effectiveness scores. On the other hand, inspection of the mean effectiveness scores for each institution in each year reveals a statistically significant change in 19 of the schools (differential $\geq$.32) between 1976 and 1983. Therefore, sufficient change in effectiveness scores is assumed for a meaningful cross-lagged analysis. Stationarity was tested by examining the cross-lag differentials to see if a change in pattern emerged (i.e., a dramatic change in magnitude or in the signs of the coefficients) suggesting a different causal relationship at different points in time. A consistent pattern was found. A more rigorous test of stationarity was performed by correcting the synchronous correlations for attenuation (see Kenny, 1975), and then comparing their differentials. No significant differences were found for any of the corrected synchronous correlations, suggesting that stationarity was acceptable.

With the four conditions met satisfactorily, it became possible to examine the cross-lagged correlations to determine the preponderance of causality. Only four sets of the cross-lags are discussed here--those dealing with overall mean effectiveness scores correlated with the presence of a union (U_p) and with years of unionization (U_y). Cross-lagged correlations for each of the nine separate dimensions of effectiveness were computed and analyzed, (see Table 2), but since the results of those comparisons were largely consistent with the overall

mean score patterns, and because a discussion of each dimension would be excessively lengthy, they are not included in this paper.

Figure 3 shows the correlations of institutions' overall effectiveness scores with the presence of a union in those schools.[2]

FIGURE 3 ABOUT HERE

The differential in cross-lags between 1976 and 1980 is .068 and between 1980 and 1983 it is .096. Neither differential is statistically significant, but the preponderance of directionality is clearly low effectiveness leading to unionism for both time periods. Between 1980 and 1983 the differential is greater than in the earlier time period (1976-1980) suggesting that the causal direction is more pronounced. Figure 4 shows the correlations over the entire study period, 1976 to 1983, and indicates that the differential is greater (i.e., .203) than in either shorter time span.

FIGURE 4 ABOUT HERE

The emergence of a stronger causal association as the time lag becomes longer in duration and more recent (i.e., 1980 to 1983) may suggest that the actual causal lag is closer to seven years than to three years (i.e., ineffectiveness must be present for a longer time in order for it to motivate unionization), or that ineffectiveness has increased in importance over time as a motivating cause of unionization. The greatest growth in faculty unionism occurred in the

[2]Point biserial correlations were computed in this analysis since the unionism variable (U_p) was coded 1,0.

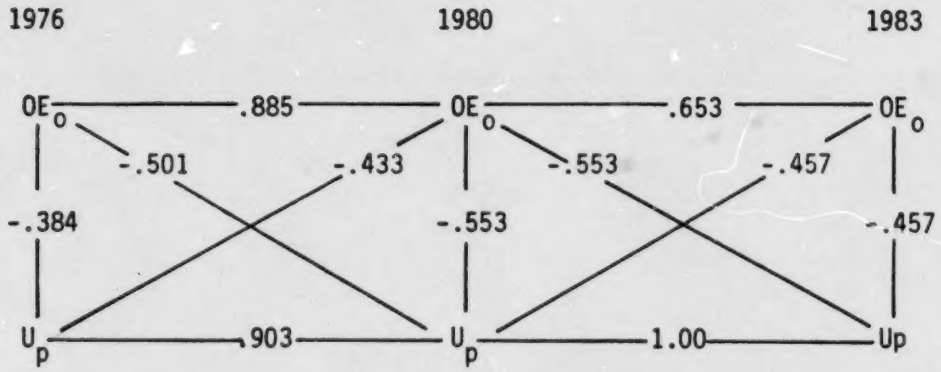


Figure 3 Cross-lagged correlation analysis of effectiveness and the presence of a union, 1976-1980 and 1980-1983.

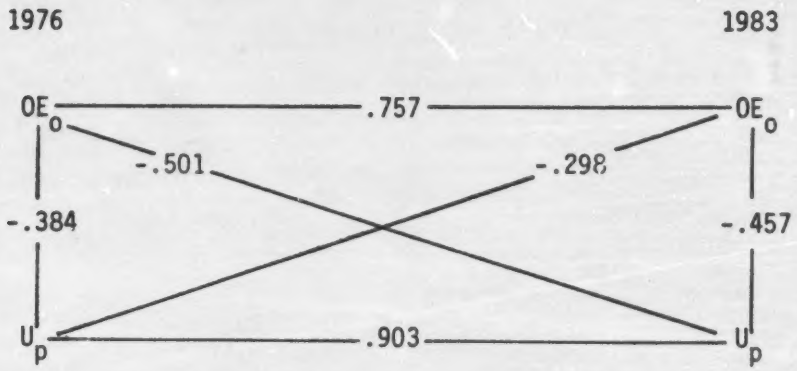


Figure 4 Cross-lagged correlations analysis of effectiveness and the presence of a union, 1976-1983

mid-1970s, but there has been a marked slowing of union formation in recent years (Birnbaum, 1980; Cameron, 1982). Other factors than ineffectiveness (e.g., enabling legislation, economic factors, union organizing campaigns) most likely accounted for the occurrence of much collective bargaining in its first ten years (1969-1979), but more recently, ineffectiveness may have become a more important factor.

Some light is shed on this association by analyzing the correlations between overall effectiveness (OE_O) and the years a union has been present on a campus (U_Y). Union age for institutions in this study ranged from zero to thirteen years. Figure 5 presents the correlation results for the 1976-1980, 1980-1983, and Figure 6 presents the 1976-1983 time period.

FIGURE 5 ABOUT HERE

FIGURE 6 ABOUT HERE

Again, differentials are not large enough to be statistically significant, but the relative magnitudes of the coefficients are consistent with the previous interpretation; that is, the continued ineffectiveness appears to be causally associated with the long-term presence of a union. What is of more interest, however, is a comparison of the differentials in 1976-1980 with those in 1980-1983. This analysis suggests that effectiveness doesn't improve over time in unionized schools. Instead, ineffectiveness continues to be associated with the presence of unionism over the years even when no new unions

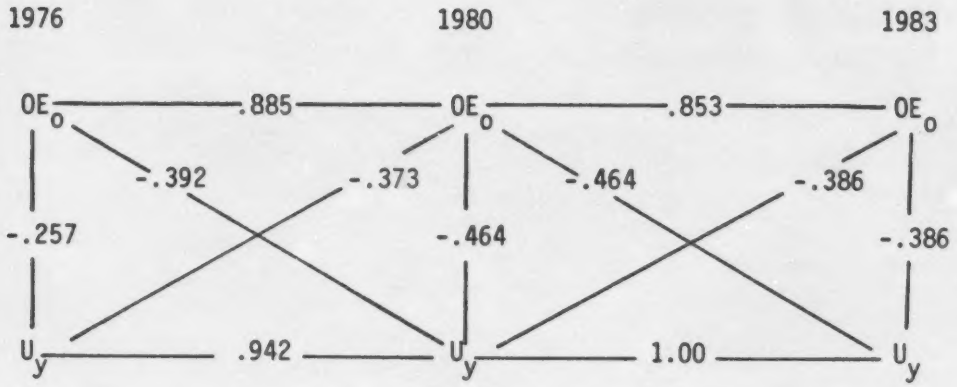


Figure 5 Cross-lagged correlation analysis of effectiveness and years of unionism in institutions, 1976-1980 and 1980-1983.

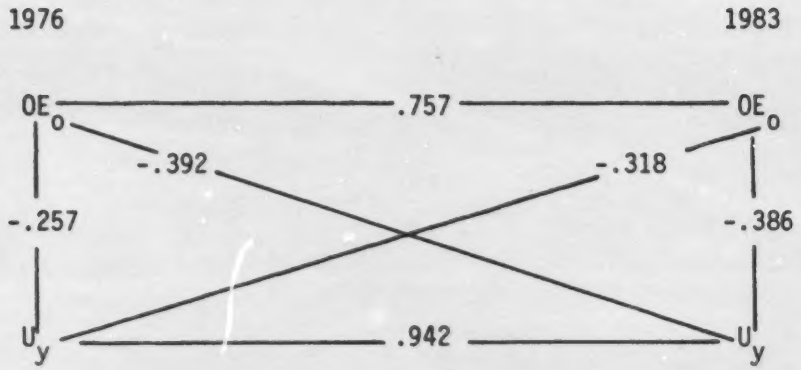


Figure 6 Cross-lagged correlation analysis of effectiveness and years of unionism in institutions, 1976-1983.

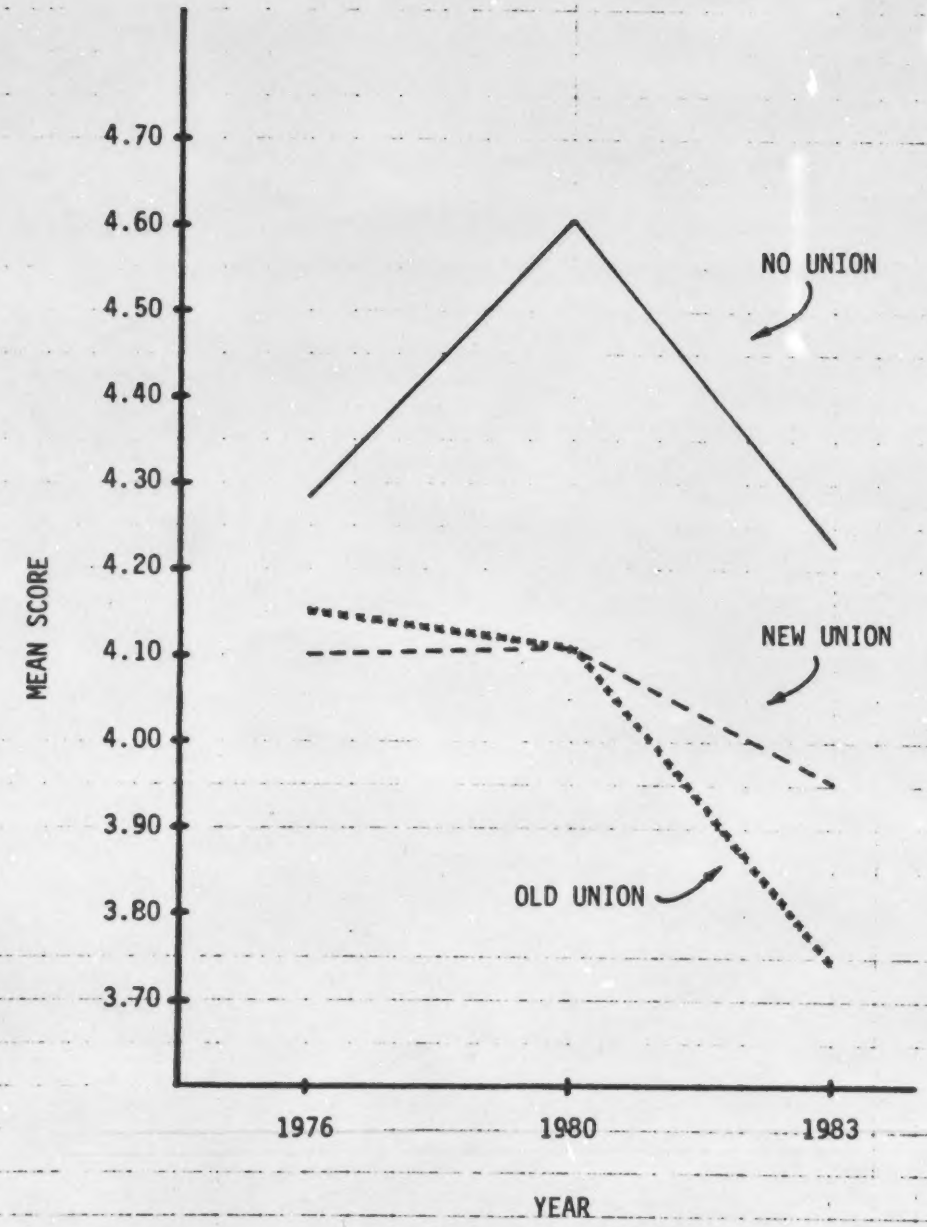
are formed (i.e., no new unions were formed in the sample between 1980 and 1983). The directionality of causation remains ineffectiveness leading to unionism for both time periods, and this increasing negative correlation over time suggests that effectiveness in unionized institutions does not seem to improve after unionization.

Another way to investigate whether or not effectiveness improves after unions are formed in institutions is to analyze the mean effectiveness scores of three groups of schools for each of the three years: (1) the nonunionized schools; (2) a group that had been unionized 2 or fewer years in 1976, 5 or fewer in 1980, and 8 or fewer in 1983 (designated "new unions"); and (3) a group that had been unionized 3 or more years in 1976, 7 or more in 1980, and 10 or more in 1983 (designated "old unions"). Figure 7 plots the mean scores for each group across each of the three years.

FIGURE 7 ABOUT HERE

Overall effectiveness increased substantially for nonunionized institutions between 1976 and 1980, but returned in 1983 to the 1976 levels. The two unionized groups were equal and relatively stable in effectiveness in 1976 and 1980, but were lower and substantially different in 1983. Institutions with old faculty unions decreased in effectiveness relative to new union schools. In 1976 and 1980, schools with old unions were approximately equal in effectiveness to the newly unionized schools. But by 1983, effectiveness in old union schools was substantially lower. Old union schools declined relative to the nonunionized group in 1980, and then remained approximately the same

FIGURE 7 A Comparison of the Overall Effectiveness of Institutions Without a Union, with a New Union, and with an Old Union in Three Different Years



amount lower in 1983.[3]

This finding suggests that whereas the causal directionality is clearly ineffectiveness leading to unionism rather than the reverse, effectiveness does not increase as unions continue to exist on campuses, although it does not get much worse relative to nonunionized schools over time.

Potential Spuriousness

One purpose of cross-lagged correlation analysis is to eliminate spuriousness as an explanation, that is, to determine if other variables than the ones being analyzed are the true causal factors. In this study it is important to know if a third variable causes both unionism and ineffectiveness. If so, focusing on those two factors alone is misleading. Because the differentials are not statistically significant in this study, it is still possible that a third more powerful variable accounts for the relationship between unionism and ineffectiveness. Birnbaum (1980, 1983b) suggested that environmental changes cause both unionism and ineffectiveness, and therefore the directionality being investigated here may be misleading. He stated:

> I would suggest that it is not ineffectiveness that leads to unionization, but rather the environmental changes (primarily increased state control) that leads to powerlessness that causes unionization. It is this powerlessness that in turn causes <u>both</u> ineffectiveness and unionization (1983b).

Fortunately a test of Birnbaum's proposition is possible with data collected from these institutions. In 1976 and 1980 (but not in 1983)

[3]No significant differences existed between the three groups in 1976, but non-unionized schools had significantly higher scores than both unionized groups in 1980 ($p<.05$) and the old union schools in 1983 ($p<.01$). Significance was not reached in 1983 when comparing the means of the two unionized groups ($p<.2$).

respondents provided ratings of the extent to which the external environment was perceived as overcontrolling, non-supportive, powerful, regulating, and hostile. That is, they rated the relative degree of powerlessness of the institution in relation to its external environment. A variable was constructed that measured the extent to which the external environment fostered feelings of powerlessness as opposed to feelings of discretion and powerfulness. Figure 8 summarizes the results.

FIGURE 8 ABOUT HERE

The directionality of causation in the top figure suggests that a supportive environment (i.e., one that supports discretion and powerfulness) leads to organizational effectiveness. In the bottom two figures, however, the causal directionality is reversed. It suggests that unionism leads to perceptions of a non-supportive environment (i.e., one that fosters feelings of powerlessness). The conclusion that must be drawn, therefore, is that the environment is not the prior cause of both ineffectiveness and unionization. Rather the hypothesized causal model that results from these analyses leads from a supportive environment to effectiveness to unionization to a non-supportive, controlling environment. Birnbaum's proposition is thus not supported.

This is not to suggest, of course, that no other factors exist that cause both ineffectiveness and unionism to occur. Spuriousness may, in fact, be present. On the other hand, the results reported here

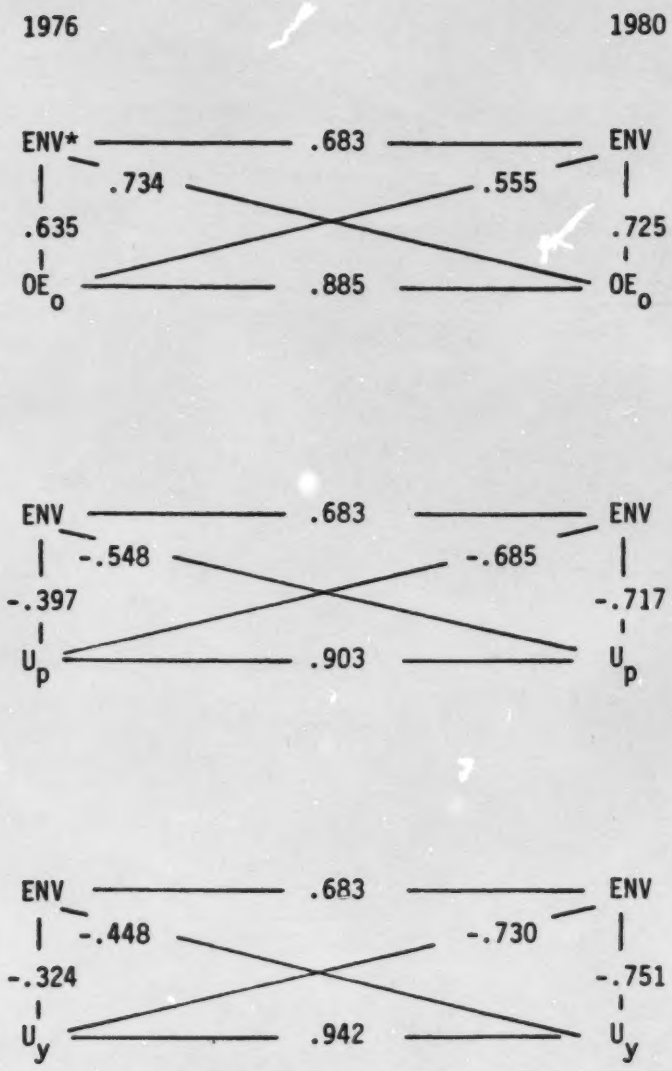


Figure 8 Cross-lagged correlation analysis of the external environment (ENV) and effectiveness, years of unionism, and presence of a union, 1976 and 1980.

*High scores on this variable indicate a supportive environment that fosters feelings of powerfulness. Low scores indicate a controlling environment that fosters feelings of powerlessness.

are strong enough to suggest that the ineffectiveness-unionism relationship has potential causal connections.

CONCLUSIONS

The major finding of this investigation is that institutional ineffectiveness appears to lead to the formation of unions and that, over time, unionism does not have a positive influence on an institution's effectiveness. Although this finding is new, it is not inconsistent with what might be expected by examining previous research on the factors that are associated with increasing organizational effectiveness and with the literature on motivations for unionization. For example, colleges and universities are comprised of at least two separate communities--the campus community and the disciplinary community (Alpert, 1983). The campus community entails teaching and organizational activities. College and university administrators largely control and govern that community. The disciplinary community entails scholarly contribution and professionalism, and it is controlled and governed mainly by professional associations and peer review. Faculty members are more prone to unionize in institutions where the disciplinary community is weak and where energies and loyalties are more closely associated with the campus community. In highly visible research universities, the disciplinary community is often so strong that it is possible for faculty to feel very little involvement and loyalty for the campus community, and to attach their loyalties to the profession. When the organizational effectiveness of the campus community decreases or is threatened, collective action is a reasonable response in institutions without a strong disciplinary

community. That is, when faculty members must look to the campus community almost exclusively for rewards and recognition of their contributions, and when the effectiveness of that community is threatened, unionization is often the selected alternative for trying to preserve effectiveness. Unionization is less likely in institutions where rewards and recognition are provided by external professional groups, and where loyalty to the campus community is more limited. (This helps explain why no institution that is a member of the AAU--major research universities--are currently unionized.) Thus, as faculty perceive the institution to be ineffective or decreasing in effectiveness, unionism may emerge as a way to consolidate efforts and mobilize collective influence to improve campus effectiveness (see Staw & Szwajkowski, 1975; Child, 1972; Thompson, 1967). Coalition formation in order to protect the campus community is a rational response (March & Simon, 1958). This is consistent with the conclusion that ineffectiveness leads to unionism.

The second part of the conclusion, that unionism does not lead to improved effectiveness, is also consistent with earlier research on unionism and effectiveness. That research found that unionized institutions exist in a less munificent external environment (i.e., fewer resources available), and that they have a lower ability to extract resources (including financial, academic, and symbolic resources) from those environments (Cameron, 1982). Both of these factors are associated with increasing effectiveness over time in colleges and universities (Cameron, 1983a). The formation of a union, which often leads to increased centralization and formalization within a school, is unlikely to be influential in affecting conditions in the

external environment or in improving institution-environment relations. Flexibility and adaptability, which generally are required to acquire external resources, suffer in unionized conditions. Institutional energy is focused mostly on internal concerns and bargaining relationships under unionized conditions (Garbarino, 1975), so increased effectiveness is unlikely to occur.

Under conditions of financial or enrollment stress, when environmental turbulence is especialy acute, the most effective institutions are those who focus more on environmental relations than internal concerns. Proactivity takes precedence over reactivity in these schools, and institutions are flexible enough to take quick decisive action (see Chaffee, 1983; Whetten 1983; Cameron, 1983a). In unionized institutions, these characteristics are less likely to be present (see Baldridge, et al., 1981; Garbarino, 1975; Richardson & Mortimer, 1978), so having organizational effectiveness scores remain low is not a surprising outcome. That is, while unions may form in an attempt to preserve the integrity of the institution, the dynamics of collective bargaining inhibit characteristics of high effectiveness from being achieved. The dimensions of effectiveness comprising the academic domain, in particular, suffer as a result of the emphasis on trade union issues and adversarial relationships (Trow, 1975).

The general conclusion of this paper also helps explain one reason why some studies have concluded that significant negative consequences of unionism appear in institutions while other studies have concluded that no such consequences appear. When comparing nonunionized institutions with those that are unionized, significant differences have been demonstrated. However, one reason for those differences may

be explained as the erosion of effectiveness in the institution and the subsequent unionization of the faculty. On the other hand, once unions are present in institutions, effectiveness does not change dramatically, but it continues to erode. Therefore, when comparing institutional conditions before and after unionism, significant differences may not occur because of the small impact of unionism on institutional functioning. When comparing unionized and nonunionized schools, however, significant differences do appear. This suggests that researchers should not only be conscious of the kinds of comparison groups used in studying the impacts of unionism, but that the causal relationships between unionism and institutional effectiveness should be more carefully and more broadly studied.

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